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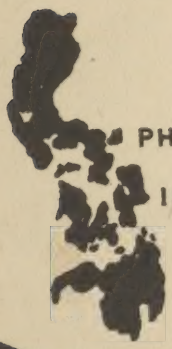
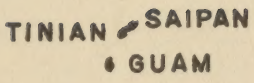




MED SEC GHQ FEC

SPECIAL MEDICAL ISSUE
SYMPOSIUM ON JAPANESE B ENCEPHALITIS

Major General Bethea presents in this issue of the Surgeon's Circular Letter the speeches given at a one-day symposium on Japanese B Encephalitis held 25 August, Tokyo.

The current encephalitis epidemic in Tokyo offered a rare opportunity to present a symposium and to demonstrate typical cases in all stages of the disease to a large number of medical personnel in the Tokyo-Yokohama area. On such a basis, a program was arranged by Brigadier General Sams, Public Health and Welfare Section, SCAP, and assisted by the Medical Section, GHQ, FEC. Approximately 100 medical officers in the Far East Command were in attendance including a group from the United States Naval Forces at Yokosuka and the BCOF Forces.

The following program was presented:

Speaker	Subject
Brig. Gen. Crawford F. Sams, Chief Public Health & Welfare Section, SCAP	Introduction
Lt. Col. L. G. Thomas, Chief Preventive Medicine Division, Public Health & Welfare Section, SCAP	Epidemiology
Mr. E. A. Turner, Sanitary Engineer Public Health & Welfare Section, SCAP	Field Control Measures
Dr. Anna Manitoff, Military Government Health Officer, Tokyo-To	Current Epidemic in Tokyo
Lt. Col. W. D. Tigertt, Commanding Officer 406th Medical General Laboratory	Laboratory Studies
Dr. Grant Taylor, Army Epidemiological Board	Clinical Aspects
Dr. Percival Bailey, Professor of Neurology & Neurological Surgery, University of Illinois	Comments

Showing of official War Department Film on Japanese B Encephalitis

In the afternoon the program consisted of a demonstration of the methods of insect control and of ward rounds in Japanese hospitals.

The material published herein has been edited to eliminate repetition of factual matter, to include editorial notes and for presentation to a reading, rather than a listening public.

VINCENT I. HACK
Captain, MSC
Editor

GENERAL HEADQUARTERS
FAR EAST COMMAND
MEDICAL SECTION

SURGEON S CIRCULAR LETTER APO 500

NUMBER. . . . . .10 1 October 1948

SYMPOSIUM ON JAPANESE B ENCEPHALITIS

I. INTRODUCTION: Brigadier General Crawford F. Sams, Chief, Public Health and Welfare Section, SCAP

In evaluating public health problems, diseases should be considered in their order of importance by determining those which kill or disable the greatest number of people, and those which can be controlled. Using these criteria, Japanese B encephalitis is not an important disease in Japan. Tuberculosis is the most important disease. About 200,000 die of tuberculosis in a year, while we have only 300 to 400 who die of encephalitis. Both diseases can be controlled but we must keep our perspective as to relative importance of things, and not give undue emphasis to some of less importance. Professional people are fascinated by "exotic" diseases and I suppose the name Japanese B encephalitis has caused the expenditure of a great many dollars and a great deal of time because of that factor alone.

Japanese B encephalitis is not greatly different from the encephalitis we have at home, clinically, or in its probable method of spread, or its method of control. I am not sure that the name Japanese B encephalitis is a proper one because this disease occurs in many other areas in the Far East.

As you know, it is one of the group of virus diseases probably transmitted by mosquitoes. A disease transmitted by insects should be controllable. There is no particular mystery about this epidemic. There is no use alibiing about it. This outbreak represents a failure of Public Health and Welfare here in Japan. We could well have had this outbreak in 1946 or 1947, as far as accumulation of non-immunes in the population is concerned. We were set for an outbreak. However, we did not have it in those two years because, I believe, we had good insect control. This year we failed.

This epidemic will serve a useful purpose in teaching the Japanese people, particularly the Japanese government (which is controlled by SCAP) a lesson, - a lesson that is hard for laymen to understand and hard for many doctors to understand; If you are going to control disease you do it by continuous and ever-lasting work. It costs money to do that work. It is not spectacular; it is not dramatic; but that is the only way disease can be controlled. Relaxation results in an epidemic which costs lives and causes disability, and expenditures far higher to bring the epidemic under control than prevention would have cost. The diseases which we do know how to control, then, should receive the bulk of our attention. We have devoted our efforts here to these controllable diseases, with some little success. At least the death rate here has been reduced a little better than half in the last three years. That reduction in overall death rate has been due entirely to the reduction of deaths in the controllable diseases group. The Japanese government officials in the Finance Ministry and, I am sorry to say, people here in SCAP, say, "Now you have all of these diseases under control. Why don't you quit and go home, and we will just stop health work. You don't need money any more for these insect and rodent control teams." That is actually the type of argument we have had to combat. We have had difficulty in obtaining money this year because our budget was not only reduced, but also delayed because of the fight between the Cabinet and Diet, which you may have read about. All of this affected control measures. You can't work in an air-tight compartment in medicine, shutting yourself up in a hospital, and expect to control disease. You are affected by politics; you are affected by decisions made in Washington. Those things affect the life or death of people here in Japan because they directly affect your ability to control diseases through health measures. Comparatively speaking we lost our fight here, so we have an epidemic. People are dead, although they are few in number compared to those who die from other diseases.

There is a mental attitude on the part of Japanese which will amaze some of you. That thinking is more difficult to overcome than some of these political things we have to fight. This mental attitude on the part of these so-called learned men is that the Japanese way is superior to all other ways. It leads to all kinds of weird thinking and acting. It led to such a weird belief as that typhoid fever in Japan was peculiar; it was different; it could not be controlled by immunization. That thinking prevailed here for 30 years despite the evidence throughout the rest

of the world as to the efficacy of typhoid fever immunization. The same thinking has been applied to Japanese B encephalitis. I was told only yesterday that, at a meeting of Japanese so-called scientists and learned men, it was decided that Japanese B encephalitis is not transmitted by mosquitoes. That opinion was expressed in the face of the work that has been done throughout the world on this subject.

These are some of the things we face in Public Health and welfare. I think you should keep them in mind when you are thinking about Japanese B encephalitis. I know you are interested professionally in seeing some of these cases. This disease is a relatively unimportant problem as far as Public Health in Japan is concerned. However, remember that these cases would not be in a hospital if we had succeeded in our work. This is an example of a controllable disease breaking out in epidemic form as a result of failure of a Public Health and Welfare program. Remember that that failure is not entirely within the control of Public Health authorities for a successful public health program is necessarily integrated with other agencies. Remember also we are faced with the Japanese way of thinking. I give you this background because in a few minutes we are going to consider the professional and technical aspects of this problem.

II. EPIDEMIOLOGY: Lt. Colonel L. G. Thomas, MC, Chief, Preventive Medicine Division, Public Health and Welfare Section, SCAP

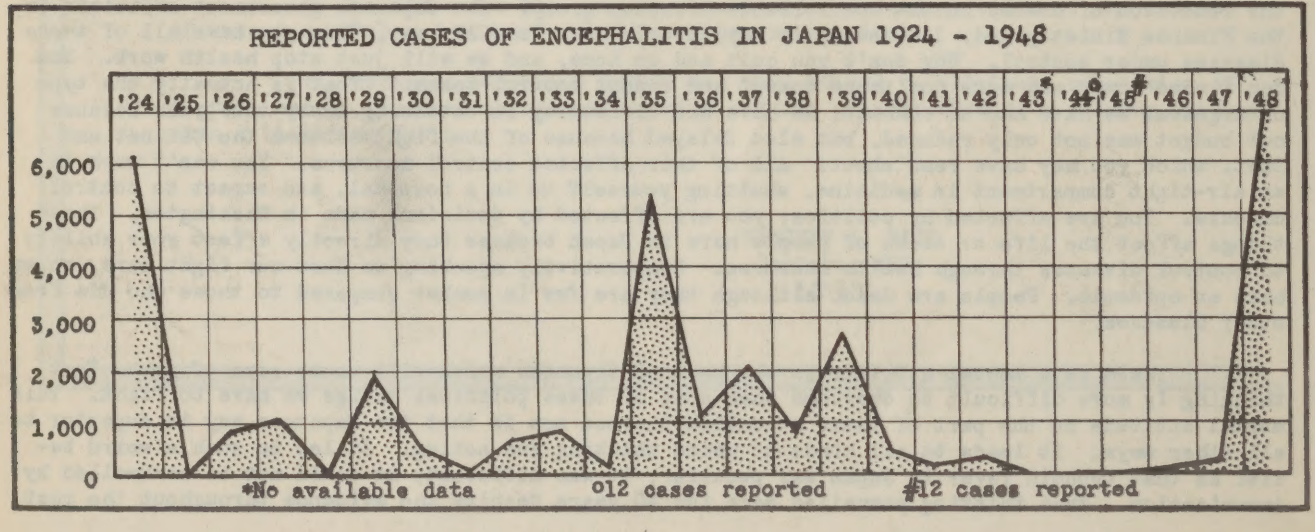
Japanese B encephalitis is not a new disease. Outbreaks thought to be this disease date back to 1871, but the first large recorded epidemic was in 1924. The etiological agent was identified in 1934, and again in 1935. Since that time much research has been conducted in Japan, in the United States, and other countries in an effort to solve the many problems in connection with this and other encephalitides.

Japanese B encephalitis is an acute virus encephalitis characterized by a rather sudden onset, high temperature, mental confusion, disorientation, purposeless movements, and speech disturbance not referrable to paralysis of vocal cords, palate, tongue, lips or muscles of respiration. Deep stupor or coma are prominent symptoms in the acute stages of this disease.

The etiological agent is a specific neurotropic virus similar in some respects to the virus of St. Louis encephalitis - but differing immunologically and in host susceptibility. The B in this term indicates that it is the second type of epidemic encephalitis occurring in Japan. Japanese workers had designated encephalitis lethargica (Von Economo) as "A" type encephalitis.

Based upon all available information, the Japanese B encephalitis virus has been unevenly but nevertheless universally distributed throughout Japan except Hokkaido. (See Figure 1A, page 3.) Outside of Japan the disease occurs on Okinawa, Formosa, Korea, Guam, parts of China and Siberia, and possibly in the Philippine Islands.

Japanese B encephalitis was not made a reportable disease on a national basis until 1946. However, efforts were made to list the cases from 1924. The reported cases are as follows:

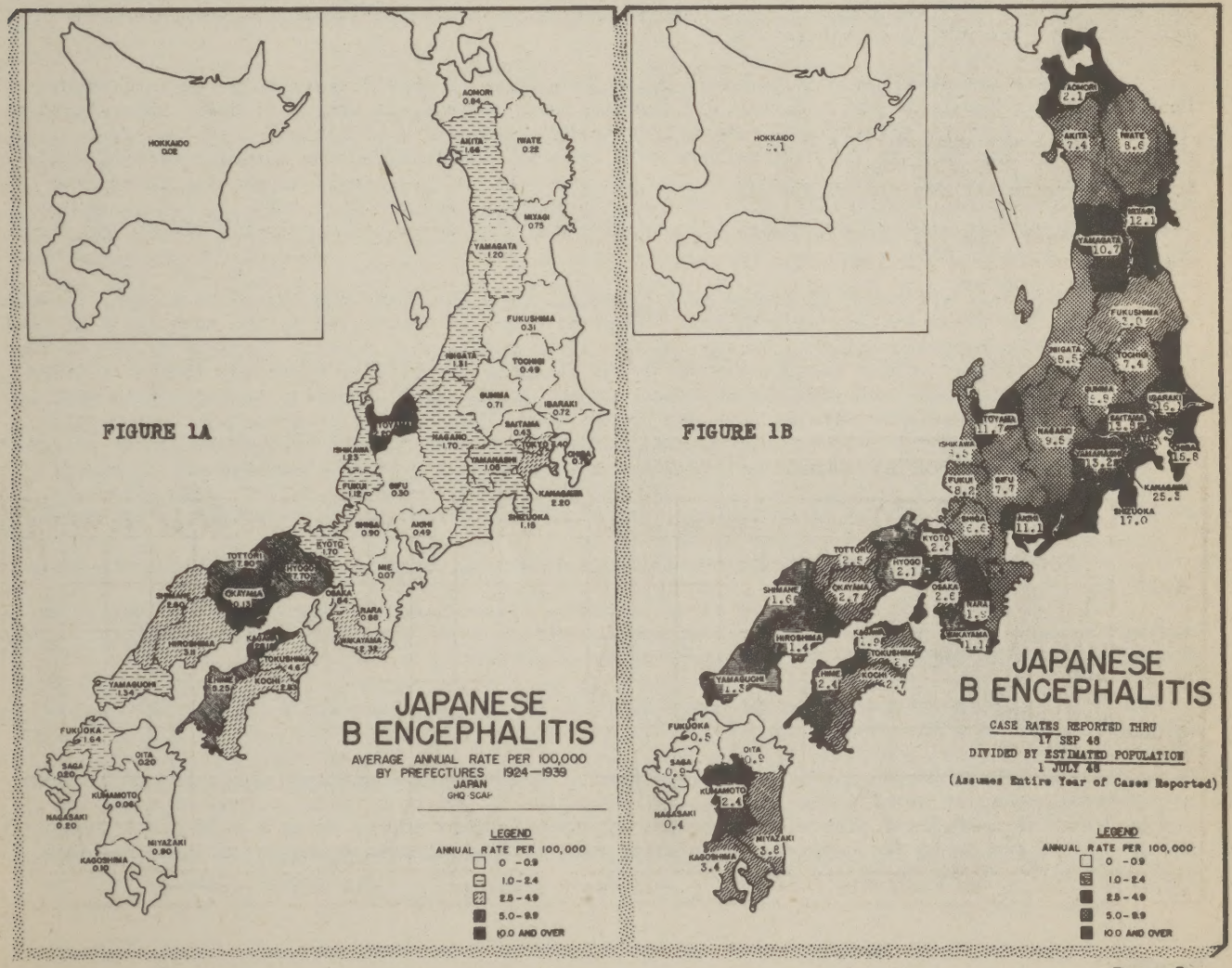


More than 22,000 of the 26,000 cases occurred during the epidemic years of 1924, 1935 and the seven other minor epidemic years (1926, 27, 29, 36, 37, 39) during the 24 year period. The disease tends to occur in epidemic form every 10 to 15 years. Figures for the period 1941 to 1945 are presumed to be inaccurate because of the war. A careful clinical and laboratory check was made of many of the cases reported in 1946 and 1947 and few were actually confirmed, which leads one to suspect that many of these cases were misdiagnosed and were, in reality, such diseases as tuberculous meningitis, pneumonia, apoplexy, brain abscess, heat stroke, etc.

Reports of incidence by age during the period 1924-1933 shows a predominance of cases among the older age groups. Beginning about 1935 the disease has occurred primarily in the young age groups in Japan. This point, correlated with other evidence, including the results of serological surveys, suggests that the greater part of the adult population of Japan is immune.

Outbreaks have nearly always been limited to mid-summer and early fall. There is usually a northward wave of progression of cases keeping pace with the onset of mid-summer weather, beginning, for example, in Okinawa in June, in the Inland Sea area of Japan (Kagawa, Okayama) in late July, and reaching Tokyo in August. This year, however, that which was thought to be the rule in this respect has not held as the current epidemic began in Tokyo slightly earlier than in previous years. Thus far this year the Inland Sea area has been relatively free of the disease. Within the past few days an appreciable number of suspects have been reported and the possibility of an epidemic in that area this year cannot be ruled out.

The first reported case in Tokyo this year had an onset on or about 20 July. By 1 August a number of suspect cases had appeared throughout the city of Tokyo. At first the cases appeared to be sporadic, but, as is usual in Japanese B encephalitis, the epidemic was explosive in nature. Soon numerous cases were reported all over Tokyo. A few days later the disease was reported in Kanagawa and Saitama Prefecture, and then all the prefectures of the Kanto Region. In addition, a considerable number of cases were reported from Shizuoka, Aichi, and Gifu. Only a few suspect cases have been reported from most other prefectures so far. It is probable, however, that many



of these cases in outlying prefectures may not be Japanese B encephalitis. Japanese B encephalitis consciousness may result in the reporting of cases of other diseases as encephalitis. (The reported cases for 1948 are shown in Figure 1B, page 3.)

In the past the fatality rate has ranged from 42% to 75%. However, experience on Okinawa during the last three years tends to show a rate closer to 30%. So far in Tokyo, where reporting, diagnosis, and treatment is probably better than most other places, the rate this year has ranged about 16% to 19%. The over-all mortality rate wil probably be somewhat higher, but lower than the rate reported in former outbreaks. One possible explanation may be that only the severe cases were recognized and reported in former epidemics in Japan. Serological surveys show that from 80% to 95% of the adults in the southern part of Japan and Okinawa posses neutralizing (immune) antibodies. This indicates without doubt that there are many subclinical or inapparent infections among the population in epidemic years, and probably in non-epidemic years as well.

If we accept the work of Mitamura, Kitioka et al, then we can say that it has been satisfactorily demonstrated that Japanese B type encephalitis is a virus disease transmitted primarily by mosquitoes. Mosquitoes appear to have many possible sources of infections among the small and large vertebrates, including mammals and birds. Many show no visible sign of infection once an epidemic has begun. Man does not appear to be an important source of the virus for its dissemination by mosquitoes. Neutralizing (immune) antibodies can be demonstrated in horses, cows, pigs, cats, goats, rabbits, sheep and dogs. The important reservoirs may not yet be discovered.

Climatic and other environmental factors appear to be most important in that certain conditions of temperature and humidity at certain periods of time seem tc give rise to propagation of large numbers of the mosquito vectors, as well as being favorable to increase of the virus.

Another important fact is the number of non-immune persons in the population. Previous epidemics have occurred when there were large numbers of susceptible persons in the population. Thus it appears that when there are a sufficient number of non-immune persons in the population, and when optimum conditions exist for propagation of the mosquito vectors, propagation and dissemination of the virus, an epidemic will occur.

There are still many facts about the epidemiology of this disease which are not known. However, if our knowledge and theories are anywhere near correct, it would, at least theoretically, be possible to prevent epidemics by controlling certain environmental factors. If the virus is transmitted to man through the intermediate host (mosquito) then effective mosquito control would prevent large epidemics. This appears to be both possible and practical, especially in endemic areas through the use of effective insecticides, larvacides, and sanitary control. Immunization used in conjunction with effective mosquito control measures may prove a valuable aid in the prevention of this disease.

Each year epidemics of equine encephalomyelitis occur among the horses of Honshu, Shikoku and Kyushu. The virus causing encephalitis in horses has been identified as the same virus as that causing Japanese B encephalitis in humans (Burns, 1947, unpublished data). There is as yet no adequate explanation as to why the disease occurs in epidemic proportions in horses during certain years (1947 for example) and yet does not occur in any appreciable extent in humans. This year it is occurring in epidemic form in both man and horses. There may be an important vector relationship which has as yet not been worked out. It is known that certain mosquitoes prefer animal blood to the human blood. Since the epidemic in horses usually precedes the epidemic in humans by from 2 to 4 weeks, it may be that such a host-vector relationship may explain such epidemics. However, until more knowledge is available, control by elimination of the reservoir is not possible.

Our present knowledge of the epidemiology of this disease may be summarized as follows:

Japanese B encephalitis virus is widely disseminated throughout the Far East. In man and horses it may produce a clinical encephalomyelitis. The virus is not host specific. Many humans and animals may show no visible signs of the disease.

Epidemics tend to occur every 10 to 15 years when there are a considerable number of immune persons in the population. Epidemics are explosive in character.

Mosquitoes are probably the vectors of the virus. Conditions necessary to produce an epidemic appear to involve the simultaneous operation of numerous factors, many of which may not be known at this time. The most important of these factors appear to be a sufficient number of non-immune people in the population, together with optimum climitalogical conditions favoring the propagation of the virus and mosquito vectors.

Prevention of major epidemics by means of mosquito control appear to be both feasible and practical, especially in densely populated endemic areas. Further research is necessary in order to intelligently combat this disease.

III. FIELD CONTROL MEASURES: Mr. E. A. Turner, Sanitary Engineer, Public Health and Welfare Section, SCAP

For the benefit of those not familiar with Japanese Public Health organizations, a brief explanation of the operation of their Sanitation program is necessary. The programs prior to the Occupation were carried on by neighborhood Sanitary Associations (Eisei Kumiai). Membership of householders was compulsory. Regular monthly fees were collected from each householder and used to pay for vaccine, drugs, insecticides, etc. The only community-wide sanitation program consisted of a clean-up week drive twice a year. Through this system the central government was relieved of the burden of sanitation problems and felt no responsibility for actually participating in disease control other than epidemic control.

The block associations (Tonari-gumi), of which the Sanitary Associations were subdivisions, were a vital part of the Japanese central government and were black listed and abolished in 1947 as a part of the overall political changes. The sanitary associations were permitted to continue as a voluntary membership organization to be used in the dissemination of public health education, and to assist sanitary control teams in wide-scale environmental sanitation programs.

Sanitary teams were organized on the basis of 1 per 10,000 population. They are six man teams including an assistant inspector who determines the necessary control measures. These teams were taught the use of DDT, insecticides of all sorts and given technical instructions on the details of insect control. During 1946 and 1947 these teams operated effectively. However, this program was largely carried by volunteer-labor groups operated by the Sanitary Associations. The effectiveness became less and less due to the "lack of compulsions".

In 1948 the Diet, upon being ordered to "balance the budget" proceeded to make drastic cuts in its expenditures. Cuts were made in the programs which the Ministry of Welfare felt should be a responsibility of local governments. The sanitary team program was included. This resulted in the failure to finance and get the teams started until the middle of the summer. This lack of early control together with unusual meteriological conditions resulted in an abnormally high mosquito population. The actual program did not get started until after the first cases of encephalitis were reported. The outbreak gave good impetus to the lagging program and all of the prefectures now have teams organized with ample supplies of DDT. These teams are operating according to plan and the effect of this work on the control of the epidemic will be determined later. It will have a very definite effect upon other insect-borne diseases. An adult control program, at the height of an epidemic, usually does not influence that specific outbreak.

In Okinawa last year of a total of 177 cases of encephalitis, 26 occurred in July. In August of 1947, 130 cases were reported. Active control measures were not begun in Okinawa until September. This year 44 cases were reported up to 4 August and only 4 cases since that time.

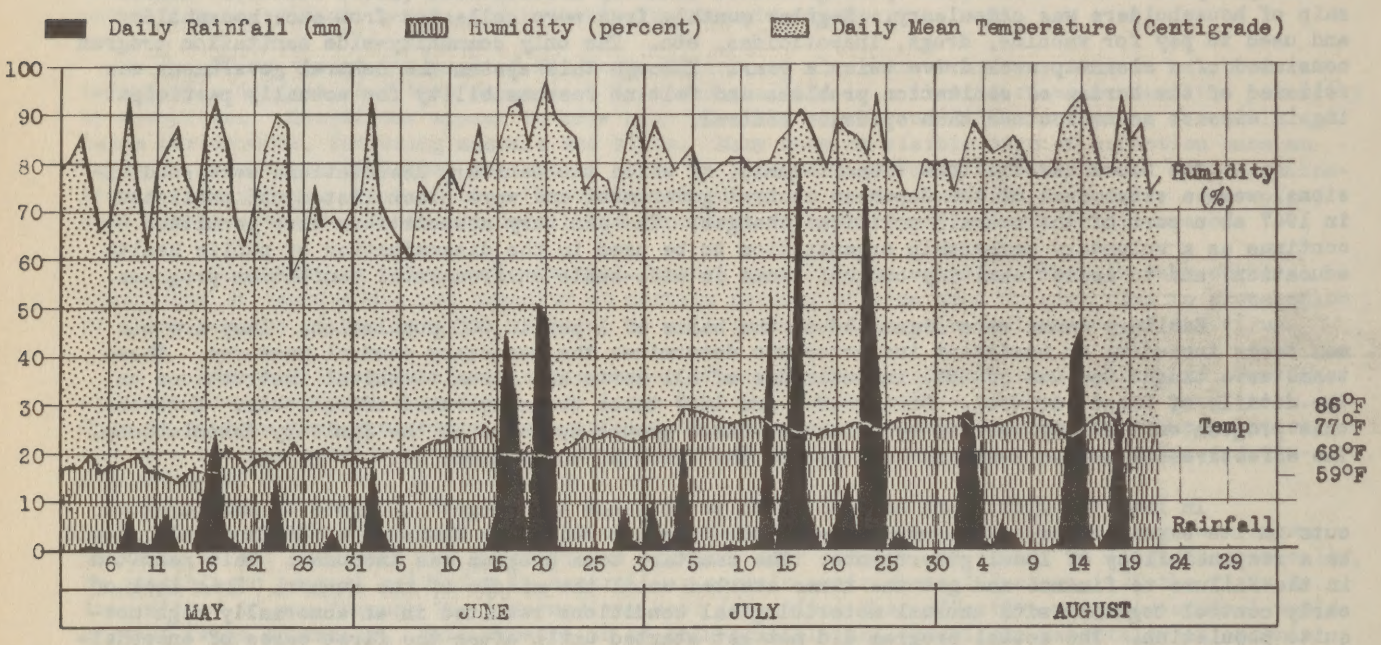
This would indicate that some specific influence had to do with this marked difference. An intensive program supervised by Army personnel was begun on Okinawa in June 1948. This consisted of spraying of every hut in the various villages. If an encephalitis case occurred, the patient was removed to a hospital and the entire village resprayed. The part played by the control program is a matter for speculation. (July of 1948 was an extremely dry month on Okinawa, Kadena reporting less than one inch of rain for the entire month in contrast to the 8-12 inch average. This may have influenced the mosquito population, in addition to providing optimal conditions for residual spraying. ED.)

The weather conditions prevailing in Tokyo in 1948 offer some information (see Humidity, Temperature and Rainfall in Tokyo chart, page 6). There were intermittent periods of rain and dry weather. Dry, hot periods were noted during the first part of May and the first part of June. The rainy periods were ideal for adult mosquitoes while the dry periods provided optimal conditions for larvae development. To control completely mosquito breeding under these conditions is impossible. However, with adult mosquito control through the winter months and early larvae control it is possible to hold the mosquito population to a minimum with fluctuations of relatively short durations. It is believed that had thorough routine Insect Control been effected in Japan early in the summer this outbreak of encephalitis would have been influenced greatly, if not held to less than epidemic proportions.

Control measures adopted during the present epidemic consist of adult control by interior residual spraying of habitations with DDT immediately after each case is reported. An area of not less than 50 meters surrounding the house is also sprayed. These measures were adopted to decrease the possibility of the spread through insect vectors. Then a larvae control team follows to prevent development of additional adult mosquitoes in the area surrounding the house. The operation of these teams will be demonstrated to the group this afternoon.

HUMIDITY, TEMPERATURE AND RAINFALL IN TOKYO

MAY - AUGUST 1948



PROBABLE MOSQUITO VECTORS

(This information is based on reports prepared by LaCasse and by MacLaren. ED.)

Of the many species of mosquitoes in Japan the following are considered to be the most likely vectors of encephalitis:

(1) Culex tritaeniorhynchus: A small, spotted legged mosquito breeding prolifically in rice paddies and resting in dark, cool sites, mainly in the natural vegetation. Rice paddies seem to be their summer breeding habitat, although a very wide variety of breeding sources have been found. This species is found quite rarely in May and June, increases rather markedly in July, reaching a peak during the first part of August, following which there is a rapid decline in population density to a point approaching zero by late September. During the day large numbers may be found in stables, or on the wall close to the floor. It is uncommonly found resting in human habitations. This mosquito is primarily a night biter with biting intensity being greatest during the hour after sun-down. It shows little desire to feed on fowl but feeds heavily on large mammals.

(2) Culex pipiens pallens: This is a larger mosquito than Culex tritaeniorhynchus and is the most common representative of the genus Culex occurring in Japan. It is widely distributed throughout all the Islands. The population densities show a gradual increase from early Spring to August, at which time peak populations are reached. It then diminishes in number through the latter part of September. Adults are frequently found in human habitats and in stables. Commonly they are seen beneath clothing or straw. The species is less sensitive to sunlight than the majority of other mosquitoes found in Japan. Larvae are usually found in polluted water containing abundant organic matter. Fecal storage containers are excellent breeding sites but practically any water may be found to contain larvae. This is an important night-biting species.

(In Okinawa this species is replaced by Culex quinquefasciatus, an almost identical culicine with the same domestic characteristics. Both feed frequently on fowl.)

(3) Anopheles hyrcanus sinensis: This species occurs throughout Japan. Breeding sites include almost any type of clear water, (more commonly ground water). Biting intensity is greatest in Japan during the early part of August. During the daytime the mosquito is commonly found in barns, but enters human habitats at night to feed. Biting intensity is greatest at about 2200. It is a mosquito with spotted wings, which has a resting position resembling a very minature javelin stuck in the wall surface at 45°. This mosquito feeds on both man and animals and is considered to be an important vector of malaria, if the other essentials to the complex transmission cycle are present.

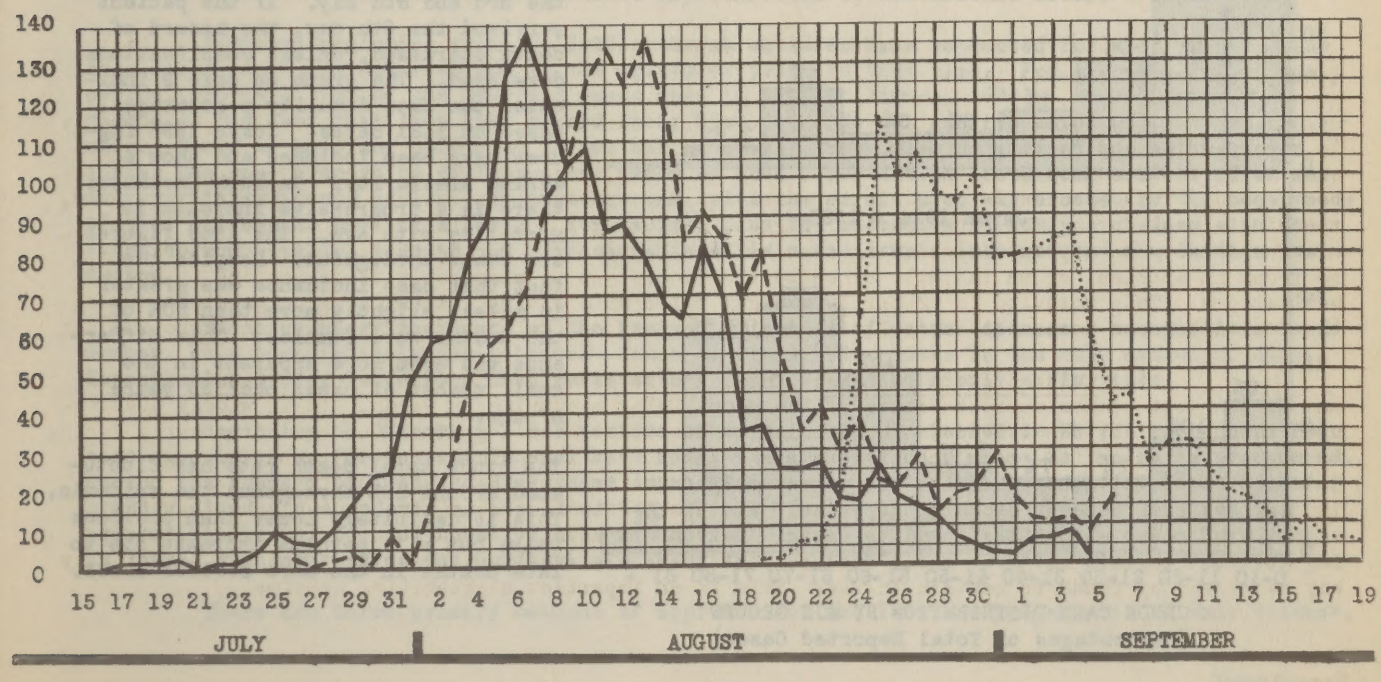
Japanese (Mitamura, T., Kitaoka, M.) and Russian (Petrischeva, P.A.) investigators have reported the isolation of Japanese B encephalitis from these three mosquitoes caught in nature. Several varieties of Culex mosquitoes have been shown to be potential vectors under laboratory conditions (Hammon).

IV. CURRENT EPIDEMIC IN TOKYO: Dr. Anna Manitoff, Tokyo Military Government Health Officer

In 1948 the first case of encephalitis (a 9 year old boy) was reported in Tokyo on 9 June. He recovered. The second case reported was a boy of 5 years of age. He died three days later (24 June) at Komagome Hospital. These early cases were reported as suspect encephalitis for no laboratory confirmations were obtained. The third case was an 18 year old female reported on 21 July. On 27 July two cases and on the 29th three cases were recorded.

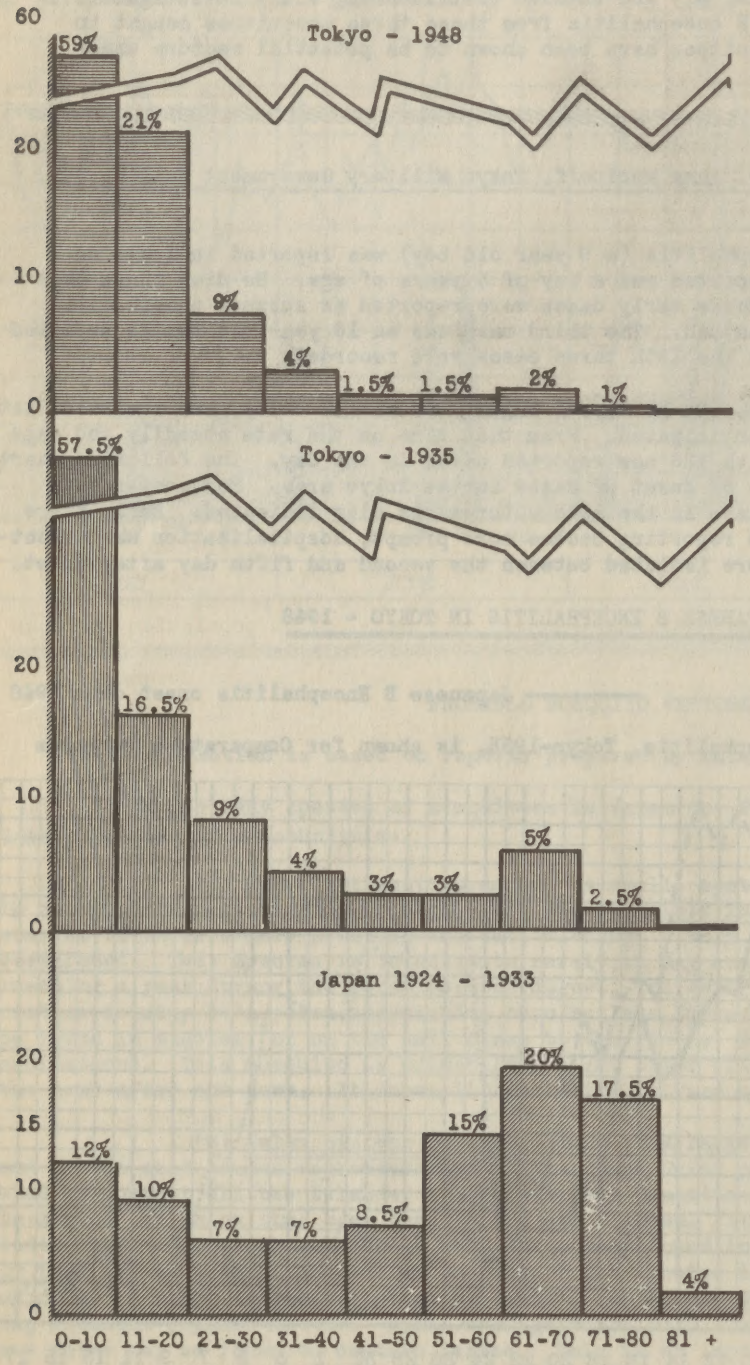
By 31 July there were 10 cases. On Monday, 2 August, we had 38 cases, and realized that cases in epidemic proportions could be anticipated. From that time on the rate steadily and rapidly increased to a peak on 13 August with 136 new reported cases in one day. The following chart shows the date of reporting and the date of onset of cases in the Tokyo area. For comparative purposes the date of reporting of the cases in the 1935 outbreak is also indicated. Early there was a lag in hospitalization, but as the reporting became more prompt, hospitalization was effected earlier. The majority of patients were isolated between the second and fifth day after onset.

DAILY INCIDENCE OF JAPANESE B ENCEPHALITIS IN TOKYO - 1948



The earliest cases were found in Kita and Daito Wards. Both of these Ku (or Wards) are either partly or totally bombed areas. Ota, Adachi and Setagaya Wards reported the greatest number of cases. In comparing the populations of the individual Wards during the 1935 and 1948 epidemics on a 100,000 population basis, we note that in only three Wards; Nakano, Suginami and Shinagawa the population has increased while the case incidence has decreased. In all other Wards the opposite is true. (These figures have been computed to 6 September. ED.)

All cases at first were placed in Komagome Municipal Hospital, but it soon became apparent that one hospital would be inadequate. Therefore, Tokyo-To Public Health officials and officials from SCAP made arrangements to provide 2,000 beds. Tokyo-To provided 1,000 of these beds and the National Ministry of Welfare provided 800 more. At no time have all of these beds been occupied.



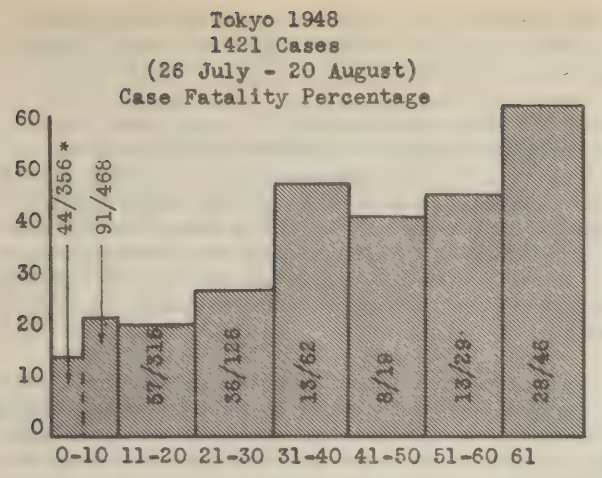
CRUDE CASE DISTRIBUTION BY AGE GROUPS
(Percentages of Total Reported Cases)

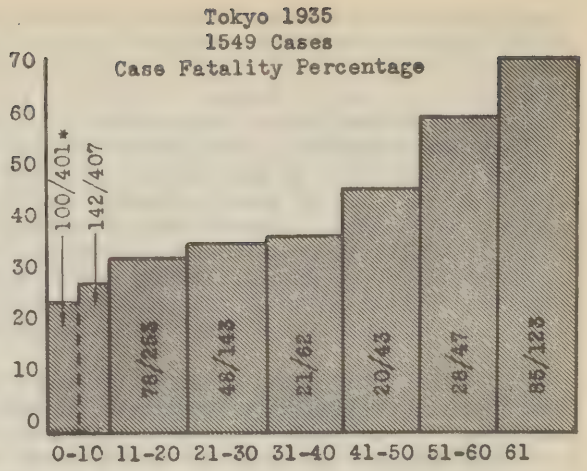
The adjacent graph, Crude Case Distribution by Age Groups, is a breakdown by age groups by percentage of total cases. It clearly indicates that children under ten years are predominately involved, while adults past 30 years of age form the smallest group. (For comparative purposes similar calculations based on the period 1924-1933 for the whole of Japan and 1935 for Tokyo are given. Based on reports by Iimura and by Inada the annual occurrence of cases for the period 1924-1933 is identical with that given by the overall summation. The cause for the apparent abrupt transition in the 1935 epidemic and the close similarity of the 1948 incidence is a matter for speculation. ED.)

Of 1959 cases reported as of 6 September, 1139 (58.8%) were males. This also is similar to 1935 when 59.2% of the reported cases were males. Multiple cases in a family have been noted only three times.

The majority of deaths occurred between the 3rd and 5th day. If the patient survived the 6th day, the hazard of death decreased, unless complications developed. The graph on page 9 indicates the case fatality percentages based on 1421 cases. Tokyo 1935 figures have been included and show a marked similarity. In both instances there is a progressive increase in mortality with age. The 1948 figures are lower throughout. Despite the fact that case incidence was greater in males, slightly more than 50% of the deaths were females. This difference was even more apparent in the small number of cases over 30 years of age.

The crude total death rate has fluctuated around 20% throughout the epidemic. This is definitely lower than previous years but will perhaps increase due to late deaths in the more serious cases.





* Deaths/Cases per age group

X. LABORATORY STUDIES: Lt. Colonel W. D. Tigertt, MC, Commanding Officer, 406th Medical General Laboratory

General Sams has very properly indicated that from the standpoint of over-all disease occurrence in Japan, encephalitis ranks well down the list of major public health problems. It is perhaps essential to explain again why the Army has devoted much time and money to the study of this disease.

Japanese B encephalitis is comparable in certain immunologic aspects to poliomyelitis and to certain of the encephalomyelitides. For every clinical case of the disease that occurs in indigenous personnel, there are a great number of inapparent infections. It is possible to estimate that the ratio is somewhere in the neighborhood of 300 to 1000 inapparent infections per clinical case. For this reason, during the passage of year, much of the population of Japan in certain areas has developed a degree of immunity to the disease. This is in direct contrast to the adult population of the United States. The Occupation has resulted in the movement of a large group of individuals with no previous experience with the disease (and consequently no immunity to the disease), into an area where we have reason to believe that the virus is maintained from year to year and where periodically outbreaks of the disease occur.

Although beginning with the 1935 outbreak children have accounted for most of the Japanese cases, such was not recorded in the epidemics prior to that time. For example, during the period 1924-1933, 78% of the recorded cases were in adults (Iimura, 1936). Adults, simply by virtue of the fact that they have passed their 21st year, do not possess an immunity to this disease. Nordo we have any notion as to whether a population composed of non-immune adults would suffer the same proportion of inapparent cases as does a population containing many children and many partially immune adults. That background, plus the morale problems created by the occurrence of this disease in Americans (even a few cases), plus the incentive to study a disease with obscure epidemiological aspects, is sufficient to explain the Army's interest and the studies conducted.

The laboratory diagnosis of the group of diseases of which Japanese B encephalitis is a member, is a comparatively new science. Since laboratory diagnosis is the only method of differentiating types, it follows that satisfactory studies date back only a few years.

Beginning on Okinawa in 1945 various members of the Commission on Neurotropic Virus Diseases appointed by The Surgeon General have spent varying periods of time in the Far East Command. During the summers of 1946 and 1947 these investigators worked in the 406th Medical General Laboratory aided and supported by the laboratory staff. Early this year it was decided that the responsibility for the continuation of this study should be assumed by the Army laboratory here in Tokyo, with members of the Commission serving as consultants.

There are three primary methods of approach for the laboratory diagnosis of this disease.

These include virus isolation and identification, neutralization tests and complement fixation tests. Development of these techniques has been in the order indicated. The virus was first isolated in monkeys from Japanese cases in 1934 and again in 1935 following essentially the techniques utilized by Webster (1933) for the St. Louis encephalitis virus. The technique is simple to describe. Brain tissue from a suspect case is emulsified in saline, and after preliminary centrifugation, small quantities of the supernatant fluid are inoculated into mice. This inoculation may be made either directly into the brain or intraperitoneally or intranasally, or by a combination of these methods. Certain other animals are also susceptible and fertile eggs may be used but mice are most frequently chosen. Ordinarily at the 406th inoculations are made into 4 to 8 gm mice and into sucklings 3 to 5 days of age. Brains of any mice showing signs of encephalitis are inoculated into another group and the process is repeated for 5 to 10 passages to permit "adaption" of the virus to the mice. Once the strain is established it must be identified by variations of the tests to be described below.

The second main sub-division consists of neutralization studies on the serum from patients. Such studies are usually accomplished in mice and require that a known virus be used. If varying dilutions of this known virus are inoculated into groups of animals it is possible to establish a dilution which will cause the death of 50% of the animals into which it is injected. This is referred to as the 50% end point. If small doses of a known virus are repeatedly injected into various laboratory animals these animals develop antibodies and become capable of tolerating extremely large doses of the virus. If serum is obtained from these immune animals, mixed with a homologous live virus suspension, and injected into groups of non-immune mice the serum will protect some of the animals of the test group and is, therefore, said to have neutralizing properties. Similarly, the sera of humans who have had experience with the virus also contain these neutralizing antibodies and by a process of dilution the amount of these neutralizing substances can be titrated. The results obtained by American workers with this test are not in agreement with previous reports and exact data as to the time of development of neutralizing antibodies is yet to be obtained. A high titre has been noted as early as the 4th day of a fatal illness and rises in titre are generally observed by the 10th to 30th day of the disease. Neutralizing antibodies persist for a matter of years and as a consequence a single test is of no value in individuals who have spent previous time in an endemic area. Neutralizing antibodies of significant levels are obtained in vaccinated individuals.

The third test used to detect evidence of this disease is that of complement-fixation. This test is comparable to the Wassermann reaction. In general it is negative for the first few days of the clinical illness and shows a rise in titre between the 7th to the 14th day of disease. These antibodies persist in detectable amounts for a period of months and usually are considered to indicate a recent infection. Because of variations inherent in the test it is essential that serial samples be examined and highly desirable that the samples be tested under identical conditions. In general, vaccination alone produces only a very slight rise or no rise at all in complement fixing antibodies, making this test of particular importance when diagnosis is attempted in a vaccinated individual.

In the earlier part of this discussion the term "experience with the virus" was deliberately used rather than clinical illness. This term was chosen because of the numerous inapparent cases. Since the neutralization test remains positive for several years it may be used to ascertain the past experience of various populations with any specific virus of this group. During the winter of 1946-47 testing of groups selected from the indigenous populations by age and locality was carried out by the 406th Laboratory in Japan, Korea, and Okinawa. Where possible, 240 individuals were tested in each area. A comparison of some of the results gives insight into this disease. For example, it is generally reported that only one clinical case of Japanese B encephalitis has occurred on the Island of Hokkaido. This was in 1939. Of the 240 individuals tested in Sapporo only 16 showed neutralizing antibodies and several of these gave a history of having lived for several years in other parts of Japan. In contrast to this, Tokyo, where 1549 cases were reported in 1935 and cases were also reported in 1939, 80% of the people over 10 years of age showed positive titres. 22% of the group between 5 to 9 years of age showed positive titres, while in the 0 to 4 years group only 5% were positive. In Okinawa, where a definite outbreak of approximately 102 clinical cases was observed in 1945, 29% of the 0 to 4 years group were positive, 56% of the 5 to 9 group were positive, 76% of the 10 to 14 group were positive and above that the incidence approached 100%. It is only necessary to extend these percentages to the total population of a given area to determine the ratio of inapparent infections to clinical cases.

A definite outbreak of Japanese B encephalitis with approximately 40 clinical cases occurred on the Island of Guam last December and January. Five deaths occurred, of which 2 were in Americans and the virus was isolated from 4 of 5 fatal cases. A population survey similar to that described above was carried out in February 1948 and approximately 65% of the indigenous population of Southern Guam exhibited neutralizing antibodies. These samples were from individuals who

had not shown clinical illness. The incidence of positive complement fixation tests was only slightly lower, indicating that the experience with the virus had been principally of recent date.

It is possible then to make the following definite statements: Single laboratory examinations demonstrate experience with the virus but do not necessarily indicate that clinical disease is or has been present. For a definite diagnosis to be made it is essential that a rise in titre in complement fixing antibodies be demonstrated, or that a rise in neutralization titres be demonstrated and these changes must be coupled with clinical evidence of central nervous system involvement. When this trend is observed the diagnosis may be made with a feeling of comparative security. If any one of this group of findings is absent a question mark must be placed after the diagnosis unless the case has a fatal outcome and the virus can be isolated and identified from material secured at autopsy.

Particular care must be taken in interpreting rises in neutralizing antibody levels on samples from individuals who have been recently vaccinated. Vaccination is ordinarily performed immediately before the expected encephalitis season. In some individuals the response may be slow and the rise in titre as a result of vaccination may fortuitously coincide with the onset of clinical illness. Interpretation is, therefore, dependent upon a full knowledge of the vaccination history of the individual concerned.

A brief statement concerning the changes produced in the brain and cord is in order, particularly since this disease is usually referred to as "encephalitis". Extensive lesions involving the cerebrum, cerebellum, midbrain, and brain stem are present. In addition, changes are also noted in the anterior horn cells and in the various tracts of the spinal cord, which in themselves are impossible to distinguish from the changes produced by poliomyelitis.

At the present time serial samples of blood submitted by the Tokyo Military Government have shown definite rises in titre in both complement fixation and neutralization tests in some 70 cases from the Tokyo area. Similar rises have also been demonstrated in serum specimens from Kanagawa, Yamanashi, Saitama, Tochigi, and Gifu. Undoubtedly as second specimens are received the presence of the disease elsewhere in Japan will be confirmed. At least eight virus isolations have been obtained from humans in the Tokyo area. Preliminary testing would indicate that definite identifications as strains of Japanese B encephalitis can be expected in the majority of these isolates. The virus has been repeatedly isolated from horses in 1947 and 1948. (Burns, unpublished data.)

(It has been shown conclusively that this disease involves both the brain and spinal cord of humans, and that it is a disease of horses, perhaps primarily a disease of horses. To conform with the nomenclature adopted for the various other members of this group of virus diseases, the name should be changed from Japanese B encephalitis to Japanese equine encephalomyelitis. ED.)

It is not possible at this time to make any statement concerning the effectiveness of the vaccine for Japanese B encephalitis. It is probably correct to assume that some inapparent infections have occurred in allied personnel. At the present time, there are 5 cases in Allied personnel in the Tokyo area which show definite clinical signs of disease accompanied by demonstrable rises in complement fixation titres. In addition to this, there have been 3 fatal cases occurring in Allied personnel and from each a virus has been isolated.

To recapitulate the laboratory aspects of this disease: Given a patient geographically located within 2,000 miles of Tokyo who during a season of high temperature, presents fever, varying neurological signs, a clouded sensorium and who shows an increasing titer as measured by neutralization tests and by complement fixation during the course of the disease, the diagnosis of Japanese B encephalitis is justified.

VI. CLINICAL ASPECTS: Dr. Grant Taylor, Army Epidemiological Board

There are now approximately 250 patients at Komagome Hospital presenting the clinical picture of Japanese B encephalitis. They present a disease pattern that is now easily recognizable and fairly constant, but the most any clinician may say is that they have encephalitis, or an encephalomyelitis. The diagnosis of Japanese B encephalitis may be entertained on clinical grounds in a known endemic or epidemic area when patients with sudden onset of fever and headache exhibit progressive signs of meningeal irritation, followed by evidence of diffuse disease of the

central nervous system. Recognition of the syndrome is not always easy and the clinical status may vary, not only from case to case, but often at short intervals in the same case. Quite characteristically, early in the illness there is pupillary miosis with impairment of reaction to light; suppression of the reflexes; diminution and/or inequality of deep reflexes; focal weakness of facial muscles or of one or more extremities; disturbance of consciousness varying from apathy to deep coma; restlessness; confusion; a striking resistance to motion of the extremities most marked in the forearms, moderate to severe nuchal rigidity; a positive Kernig's sign; and frequently convulsive episodes, (particularly so in the infant and child). Pathologic plantar reflexes are frequently elicited, but the reflex findings in general are variable and abnormalities are often fleeting. The transient loss of the power of speech, without accompanying paralysis, following in the wake of delirium or coma is an almost constant finding. The power of speech usually returns by the tenth day of the disease, but may be absent longer. In the uncomplicated case the acute phase of the disease is remarkably constant, lasting seven or eight days. Mental impairment may be slight and of short duration or profound, resulting in a vegetative state. The former is the rule.

Following is a brief clinical analysis of the 475 patients who have been hospitalized at the Komagome Hospital since 28 July 1948:

Age and Sex Distribution: The disease is seen most frequently in the young and the aged. Striking is the absence of the middle-age group. Young males were more frequently afflicted.

Onset of Illness: The onset of the illness was described as acute and abrupt. The frequent story was that of a child at play suddenly complaining of feeling ill or sleepy, or having the sudden onset of a severe headache. Adults, while at work or upon awakening, gave similar stories. Nausea and/or vomiting was reported by 62% of the early cases studied. Severe headache, restlessness, stiffness of the neck and delirium soon followed. The temperature (axillary) ranged from 39° to 40°C. At this stage the patient refused food and liquids. Upon arrival at the hospital the patients, for the most part, were dehydrated, acidotic, and frequently convulsing. Tetany was seen frequently in infants.

Physical Findings: The acute manifestations of the disease were predominately those of diffuse involvement of the central nervous system:

Reflex abnormalities		All
Tremors (particularly tongue)		All
Rigidity of the extremities		98%
Mental disturbances		98%
Nuchal rigidity		96%
Alterations of consciousness varying from deep coma to lethargy		91%
Convulsions		78%
Incontinence of urine		61%
Apparent trismus		43%
Paralyses	Ptosis 2	
	Facial 1	
	Hemiplegia 5	
	Dyskinesia 1	
	Decerebrate attitude 5	
Oculomotor dissociation		4%
Alteration of sleep		4%

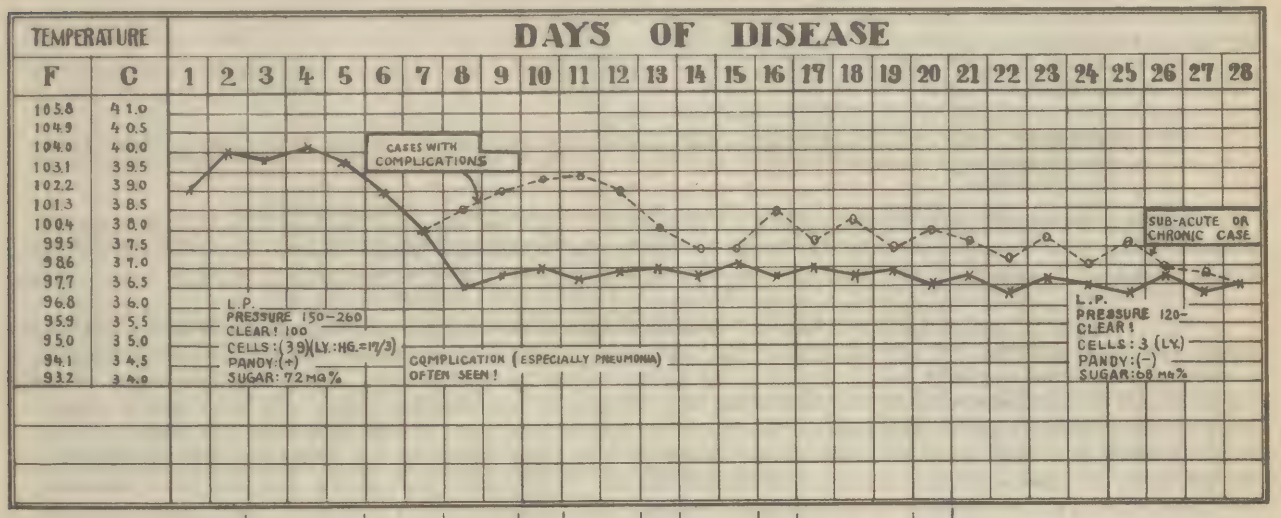
Diplopia was not found in this series. Reflex abnormalities occurred in almost all patients. Suppression of the superficial and deep reflexes was the rule.

Fever: The temperatures ranged from 38°C to 41.5°C and in the uncomplicated cases returned to normal quite consistently on the seventh day of the disease. The height of the initial febrile period and the type of febrile response were not indicative of the subsequent course of the patient. A fever occurring between the seventh and the thirteenth day was most frequently caused by a complicating pneumonia or otitis media; and a fever slowly subsiding into and through the third week of the disease was usually indicative of a chronic or vegetative disease state. See graph, page 13, for a composite picture.

Laboratory Findings: The spinal fluid pressures average 220 mm of water. The cells average under 100 per cm. Initially PRM's, and later lymphocytes, predominate. The usual

count in the cellular response is about 40 cells per cmm. The Pandy is only slightly positive and the sugar is within the normal range. The spinal fluid findings of the uncomplicated cases return to normal by the twenty-first day. In the chronic or vegetative cases, the pleocytosis persists. (Komagome Hospital laboratory reports.)

There is an early leukocytosis of 15,000-17,000 W.B.C. and an increase in the neutrophils. After this initial elevation, the W.B.C. falls to 6,000 or 7,000 cells by the seventh day. Early in the disease there is a shift to the left. As the acute phase of the disease subsides, the differential count assumes a normal pattern.



USUAL COURSE

1-2 DAYS: HEADACHE(+), CONSCIOUS: RIGIDNESS(+).

3-5 DAYS: UNCONSCIOUS: LETHARGY OR COMATOSE: CONVULSIONS, STIFF NECK: KERNIG'S SIGN(+), CUTANEOUS REFLEXES LOST, EATS NOTHING.

6-7 DAYS: A LITTLE CLEARER, LETHARGY OR EUPHORIC, STIFF NECK(+), KERNIG'S SIGN(+), CUTANEOUS REFLEXES BEGINS AGAIN.

8-9 DAYS: ALMOST CONSCIOUS.

CAN TALK, BUT IN SOFT TONE. CAN NOT WALK YET. TREMOR OF TONGUE.

TREMOR OF TONGUE ALMOST DISAPPEARS.

CAN TALK RELATIVELY WELL. CAN WALK.

CAN TALK AND WALK WELL.

Differential Diagnosis: At Komagome Hospital the following have presented some similarities:

Meningococcal meningitis and the purulent meningidities
Tuberculous meningitis
Poliomyelitis and polioencephalomyelitis
Typhoid fever
Dysentery
Brain tumors and brain abscesses
Vascular accidents
Hysteria
Pregnancy with transverse myelitis
Weil's disease

Duration of Illness: The shortest interval in which improvement in clinical status was noted was four days. The bulk of the patients appeared completely recovered within twenty-one days. Although the onset of symptoms was invariably acute, the course of the disease was sometimes sub-acute or chronic.

The case fatality rate has remained essentially the same throughout the epidemic. (This is in contrast to reports of encephalitis outbreaks in the States where the first cases frequently show a higher fatality rate than do those in the latter part of the season. ED.)

Of the total of 475 Komagome patients, 107 have died. Seventy-eight percent or 286 of the remaining patients have made and are at present making an uneventful recovery. The more severe cases have been retained in the hospital and may erroneously influence your mental picture of the disease as you view them this afternoon.

VII. COMMENTS: Dr. Percival Bailey, Professor of Neurology and Neuro-surgery, University of Illinois

I am familiar with St. Louis encephalitis that we have to deal with all the time. Occasionally equine encephalitis is found in Illinois, although I have never observed an epidemic. Since Japanese B encephalitis seems to be closely related, I was very anxious to see these cases.

Being a neurologist, I am, of course, interested in the relationship between the pathology and the symptoms of the disease. In the first place, it is quite obviously not primarily a meningitis. The patient has only from 30 to 60 cells in the spinal fluid and the signs of meningitis are relatively mild. The headache has intrigued me considerably. We have now a great deal of information about the mechanisms causing headaches, and these cases do not seem to fit in very well with any sort of mechanism I know about. The headache is probably due to direct involvement of nerve fibers within the intracranial cavity but just where I'm not sure because the infection is not primarily meningeal. Within the brain itself, the only area which is sensitive to pain is the thalamus opticus and in these cases the headache is not influenced by the maneuvers which used to relieve an ordinary headache. It seems that they get more relief from caffeine sodium benzoate than from any other drug. Why this is, I am unable to explain. It is very possible that the headache or the pain they complain about is primarily due to inflammation of the thalamus. I say that because there are other things which point toward the basilar regions of the brain as the site of an intensive pathological process. One is the loss of consciousness. We do not know where consciousness resides in the brain but we can say that its mechanism is concentrated within a small area about the aqueduct of Sylvius. There must be serious involvement of that area because loss of consciousness is practically a constant finding in these cases.

The cerebral cortex, however, can be involved as evidenced by frequent convulsions. They can be accounted for in the children perhaps simply by the height of the fever but not in the adults and besides there are cases which have focal convulsions. There is one case there now which has practically continuous convulsive movements in one side of the face. Another evidence that the cerebrum is involved is the hemiplegia which occurs. We know that hemiplegias may occur from lesions anywhere along the pyramidal tract above the facial nucleus. There is involvement of the spinal cord also in these cases and the signs of hemiplegia are often combined with loss of tendon reflexes in irregular distribution.

There is also the early rigidity which we have to explain and the tremors and dyskinesias. Those symptoms are usually referred to the basal ganglia. I have been unable to explain the absence of any paralysis of the eye muscles and the practical absence of any pupillary disturbances. In epidemic encephalitis (Von Economo type) where the brunt of the inflammatory reaction lies in the neighborhood of the mid-brain, we see those symptoms very frequently and this is the area where the mechanism which underlies consciousness is located. In epidemic encephalitis the involvement of this area is indicated by the lethargy which the patient has and which gives its name to the disease.

Another sequela of epidemic encephalitis in children has been observed, so far as I am aware, in only one of these cases and that is the disturbance of the sleep rhythm. Very often, children with epidemic encephalitis will either sleep all day and be wide awake at night or else not sleep at all. There is one of the patients at the Komagome Hospital who has not slept for nearly a week and is constantly active. It again is an indication that the inflammation is down in the basilar regions near the hypothalamus or the mid-brain but it is strange that paralyses about the eyes are so rare. Of course in the nervous system we know many instances of the select-

ivity of toxins for specific structures, for example, in lead poisoning we see paralysis of the extensor muscles of the wrist and none of the flexor muscles. It is exceedingly interesting how viruses which have the same focal localization within the nervous system may strike certain structures there and leave others untouched.

EDITOR'S NOTE:

As of 24 September 1948, 25 non-fatal cases of Japanese B encephalitis are known to have occurred among American Occupation personnel. In each serologic confirmation by complement fixation has been obtained. In addition to these non-fatal cases, 5 deaths have occurred. In 3, virus isolation was successful with tentative identification as that of Japanese B encephalitis. In one instance suitable serologic confirmation was obtained prior to death and in the one death that occurred at sea there is strong circumstantial support for the diagnosis.

The majority of the cases have occurred in the Tokyo area but cases have also been reported from Yokosuka, Yokohama, Nagoya, Kobe and Okinawa.

Of the five deaths, three were fulminating cases exhibiting diffuse central nervous system disease with abrupt fatal terminations. One case (Okinawa) expired 13 days after onset and the unconfirmed case expired approximately 3 days after onset.

Cases listed above as non-fatal have passed the febrile period of their disease. Seven were profoundly ill. In each instance the recovery period has varied. There are no instances of obvious peripheral residual neurological symptoms. The evaluation of the mental status of these patients remains to be completed.

AZIMUTHAL EQUIDISTANT CHART

PART II

ADMINISTRATIVE

IX. Medical Records - Reports of Sick and Wounded

The considerable number of erroneous and/or incomplete Sick and Wounded Reports and individual medical records being returned by the Office of The Surgeon General indicates that the personnel responsible for the completion of these records are not familiar with the provisions of AR 40-1025, as amended, and TB MED-203. Additionally, the need for a more thorough and accurate review of these records by the Surgeons of Bases and Commands is indicated. Past observation reveals that, in many instances, the same errors are being repeatedly made by the same medical units. Action necessary to eliminate errors, particularly those so obvious, should be taken to insure that only properly prepared records are submitted to The Surgeon General.

A few of the errors most frequently noted during the past few months are as follows:

a. Report period of the Report Sheet of Sick and Wounded (Item 2) is incorrect. The Monthly Report of Sick and Wounded does not pertain to the calendar month but will include data from midnight of the last Friday of the preceding month up to midnight of the last Friday of the current month. Hence, the report will cover either 4 or 5 weeks depending on the number of weeks in the period. The initial date indicated on the report will be the Saturday following the last Friday of the preceding month and the final date will be the last Friday of the current month. For example, the report period indicated on the Report Sheet of Sick and Wounded for the month of September, 1948, would be 28 August 1948 - 24 September 1948. Initial and final reports may cover partial periods. In all cases both the initial and the final dates of the report period will be specified. (Reference: Paragraph 99, AR 40-1025.)

b. Failure to forward a copy of individual medical records and the Report Sheet of Sick and Wounded to The Air Surgeon when required. Upon final disposition of any Department of the Air Force flying personnel (note this includes all flying personnel and not just pilots) who were either admitted or carded for record only, and in all cases of death occurring among individuals assigned or attached to the Department of the Air Force, a legible copy of all individual medical records completed on the patient during the current illness will be forwarded direct to The Air Surgeon, together with a copy of the monthly Report Sheet of Sick and Wounded. Each form will have typed or stamped at the top "Copy for Air Surgeon". The correct address for forwarding such records is as follows: Chief of Staff, Headquarters, United States Air Forces, Department of the Air Force, Washington, D. C., ATTENTION: Air Surgeon. (References: Paragraph 111, C2, AR 40-1025 and paragraph 18, AR 600-550.)

c. Failure to record the complete "how, when, and where" and the part or parts of the body affected in non-battle injury cases. (References: Section V, AR 40-1025 and Section IV, TB MED-203.)

d. Failure to record the date of disposition. Additionally, numerous records have been returned by The Surgeon General because the date of disposition has been indicated as occurring prior to the date of admission. (Reference: Paragraph 68, AR 40-1025.)

e. In death cases, failure to record the cause or causes of death and failure to indicate the result of autopsy. When no autopsy is performed, that fact will be stated. (References: Paragraph 9, TB MED-203 and paragraphs 8c, 53e and 67, AR 40-1025.)

f. Failure to complete an individual medical record on both the mother and the child in delivery cases and failure to note the fact of delivery on the record of the mother. An individual medical record is required on each infant born in an Army Medical installation, including stillborn infants. Infants born on an Army station but not in hospital and infants attended by an Army surgeon will be carded for record. (References: Paragraphs 21 and 30, TB MED-203 and paragraph 164, AR 40-1025.)

X. Nurses Administrative Card Index for Medications, Treatments, Preparations and Diets, by Lt. Colonel R. D. Colhoun, ANC, Nursing Consultant, Far East Command

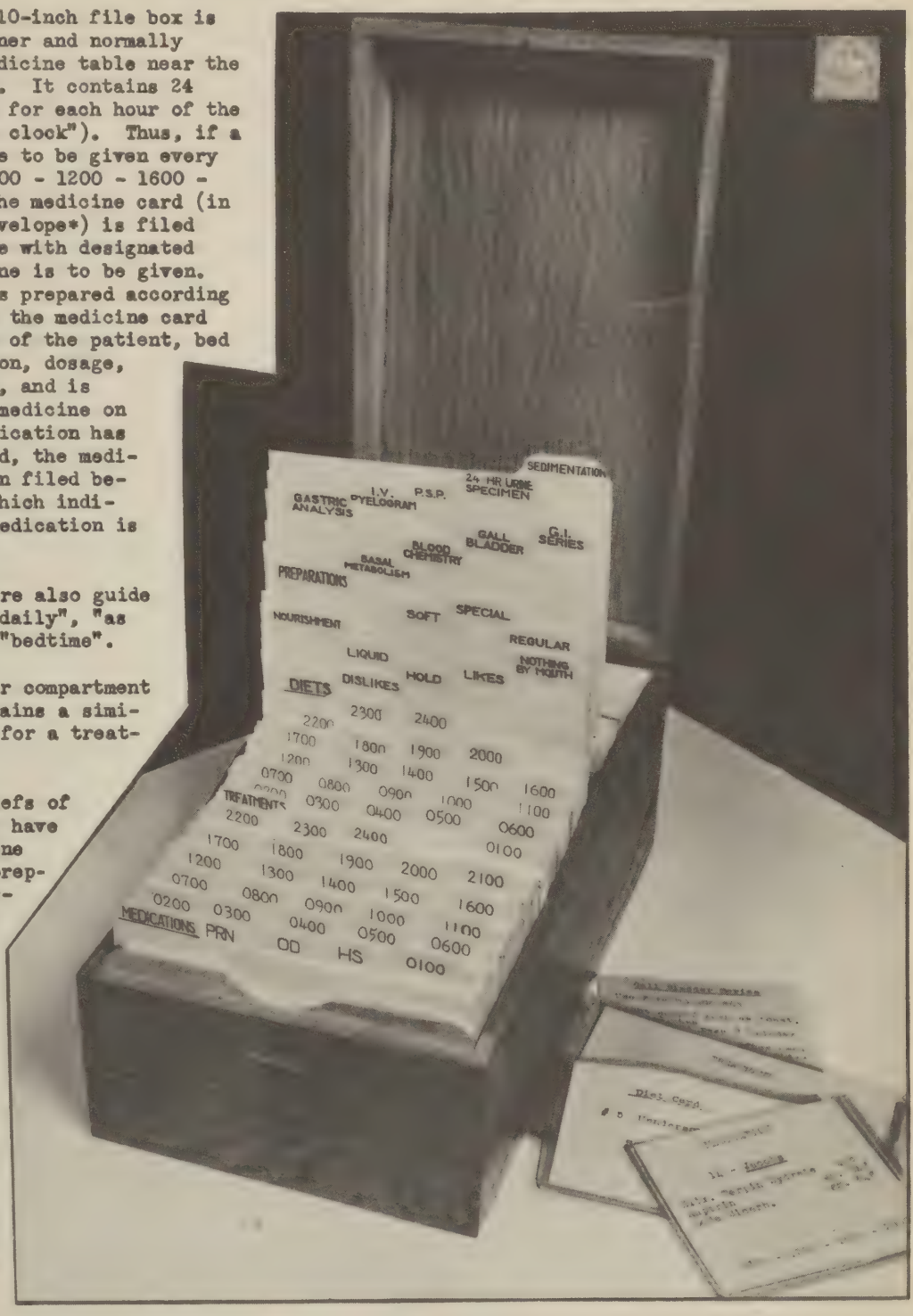
Paper work for nurses in Army hospitals within the Far East Command has been greatly decreased by the use of a card system. This arrangement eliminates maintaining lists and re-writing directions to prepare medications, treatments, tests, and serving diets.

A 5½-x-10-inch file box is used as a container and normally placed on the medicine table near the medicine cabinet. It contains 24 guide cards, one for each hour of the day, ("around the clock"). Thus, if a medication is due to be given every four hours -- 0800 - 1200 - 1600 - 2000, etc., -- the medicine card (in a transparent envelope*) is filed back of the guide with designated hour when medicine is to be given. The medication is prepared according to directions on the medicine card which gives name of the patient, bed number, medication, dosage, time to be given, and is placed with the medicine on tray. After medication has been administered, the medicine card is then filed behind the guide which indicates the time medication is again due.

There are also guide cards for "once daily", "as necessary", and "bedtime".

The rear compartment of the file contains a similar arrangement for a treatment schedule.

The chiefs of various services have determined routine orders for the preparation of laboratory and x-ray such as blood chemistry, gall bladder series. These orders are typed on colored cards with the name of the test at the top and bottom and placed in trans parent envelope. These cards explain what form to use in requesting the appointment for the test, what to explain to the patient in order to orient the patient as to the purpose of



the test, what he can expect, and how he can cooperate toward the preparation.

The guides are filed alphabetically by name of test. Several cards of each test are typed so that when a doctor desires a certain test for one or more patients, he so indicates on the doctor's order sheet for each patient, and the colored test preparation card is taken from the box and inserted at the bottom of each patient's chart in the book unit.

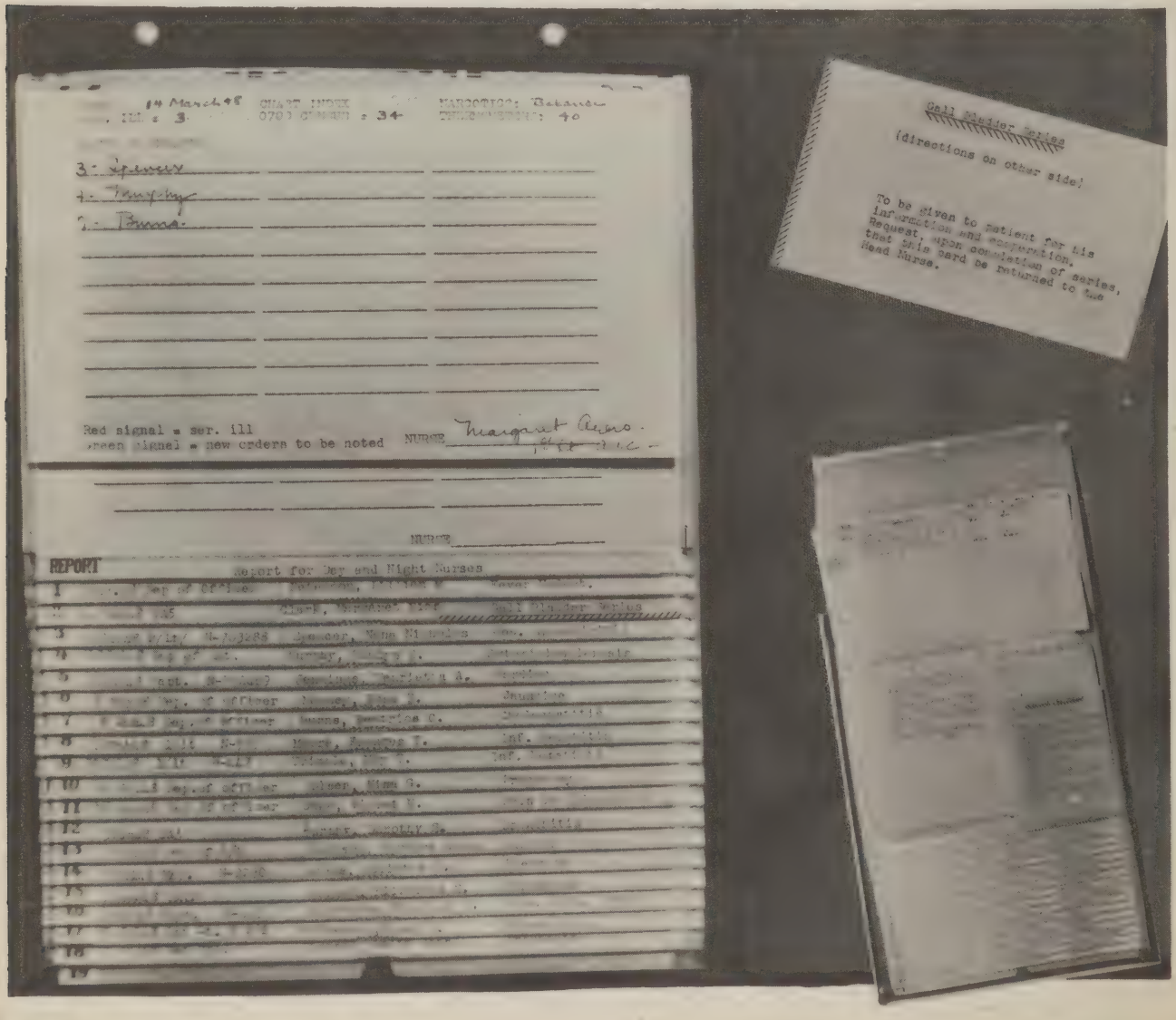
The chiefs of the departments have agreed upon a standard preparation as a routine. This gives the patient protection and efficient service.

This system can be used to advantage for the serving of diets. The patient's diet card which includes name, bed number, type of diet is placed in a transparent envelope and filed back of the guide for designated diet until serving time when it is placed in card holder on tray. After tray is returned to kitchen, the diet card is refiled in proper space in box which has guides for: "Hold", "Nothing by mouth"; "Likes"; "Dislikes"; "Liquids"; "Soft"; "Special"; "Regular".

* The transparent envelope may be made from x-ray film by closing three sides with machine stitching or using scotch tape. Its purposes are: (1) Protection from soiling; (2) Economical.

The Nursing Report Form for Book-Unit

To further simplify the administrative and clerical work for ward nurses, the illustrated form for the Report in the book-unit eliminates a second book for the "Day and Night Report". This form covers three periods 0700-1500-2300 for the change of nurses.



System: The bed number and patient's name is noted to focus attention upon the individual chart requiring a report. These forms are retained on the ward for thirty days.

Advantages: (1) The patient's chart is accurate and complete. This is the most official record and no other report should be necessary. Thus it saves duplication.
(2) Saves time and labor.
(3) Standardizes an outline for accuracy and uniformity.
(4) All nursing records are in the book-unit.
(5) It prevents the nurses searching through charts that do not require a report.
(6) It strengthens the report of one nurse to another from the chart, or serves as a flag for direct reference to the chart.

By having a mimeographed daily master sheet for those requiring Temperature, Pulse, and Respiration and the Morning Report (WD AGO 8-107) also in the book-unit, all nursing records will be under one cover.

XI. Recent Department of the Army and FEC Publications

AR 1-10, DA, 1 Jul 48, "Army Regulations, List of Current and Suspended Regulations" - page 10, "Medical Department"

AR 40-100, C-5, DA, 13 Jul 48, "Medical Department, Miscellaneous Physical Examinations"

AR 605-51, DA, 16 Jul 48, "Commissioned Officers", "Permanent Promotion in Army Nurse Corps and Women's Medical Specialist Corps, Regular Army"

AR 145-30, C-1, DA, 2 Aug 48, "Reserve Officers' Training Corps (ROTC) - Training Camps" - par 14, Physical Examinations, Changed

AR 605-145, DA, 3 Aug 48, "Commissioned Officers - Transfers, Details, and Assignments" - par 2, Branch - Medical

AR 605-8, DA 17 Aug 48, "Commissioned Officers - Appointment of Lieutenants, Regular Army, from Officers on Extended Active Duty" - par 14, Zone of Interior Testing Stations

AR 40-410, DA 20 Aug 48, "Medical Department - Army Institute of Pathology"

AR 40-115, DA, 20 Aug 48, "Physical Standards and Physical Profiling for Enlistment and Induction"

AR 615-368, C-1, 25 Aug 48, "Discharge - Unfitness (Undesirable Habits or Traits of Character) - par 1 (3)(b)

AR 615-369, C-2, 25 Aug 48, "Discharge - Inaptitude or Suitability (Inaptness, Lack of Required Degree of Adaptability) or Enuresis"

AR 40-590, C-4, 1 Sep 48, "Administration of Hospitals, General Provisions"

AR 600-550, C-3, DA, 1 Sep 48, "Personnel - Deceased"

G.O. 52, DA, 22 Jul 48, Sec I, "ROTC Units" - Dental Corps, Medical and Pharmacy ROTC Units Establ.

G.O. 55, DA, 11 Aug 48, Sec II, "ROTC Unit" - University of Oregon Medical School"

BUL 23, JAAF, 30 Jun 48, "Women's Armed Service Integration Act of 1948"

BUL 25, JAAF, 7 Jul 48, "Military Appropriation Act, 1949", - page 10, "Medical Department"

SB 8-36, DA, 2 Sep 48, "Quarterly Dropping Allowance for Minor Items of Non-expendable Organizational Equipment"

CIR 193, DA&AF, 1 Jul 48, "Volunteering, Selection and Processing for Airborne Training", - par 3a, "Selection Criteria - Physical"

CIR 202, DA, 7 Jul 48, "Implementation of Career Guidance Plan for Warrant Officers and Enlisted Personnel" - Certain Parts Applicable to Medical Department

CIR 207, DA, 9 Jul 48, Sec V, "Installation" - (Pertaining to Binghamton Medical Depot)

CIR 209, DA&AF, 13 Jul 48, "Military Records, Officers' Separation Certificates" (Pertaining to Army Nurses)

CIR 210, DA, 14 Jul 48, "Appointment of Professional and Technical Experts or Specialists in Officers' Reserve Corps", - pars. 55, 59 and 62 - "Medical Specialists"

MEMO 700-50-1, DA, 21 Jun 48, "Returned Materiel" - par 3 d "Medical"

MEMO 40-590-13, DA, 9 Jul 48, "Administration of Fixed Hospitals - Zone of Interior"

TM 20-605, DA, 29 Jun 48, "Career Management for Army Officers" - par 42, "Medical Corps Career Pattern"

TB MED 80, C-1, DA, 16 Jul 48, "Convalescent Treatment Program for Neuropsychiatric Patients"

TB MED 78, DA, 6 Aug 48, "Use of Needles and Syringes"

CIR 25, GHQ SCAP, 27 Jul 48, "Private Commercial Entrants" - Cir 3, GHQ SCAP 1948, amended

CIR 26, GHQ SCAP, 12 Aug 48, "Foreign Quarantine Regulations for Japan" - Cir 9, GHQ SCAP, 1948, changed

PART III - STATISTICAL

Evacuation

During the period 26 June to 30 July 1948, the following number of patients were evacuated from the several major commands:

	AIR	WATER	TOTAL
JAPAN	112*	159*	271*
KOREA	84**	0	84**
MARBO	29	1	30
PHILRYCOM	23	3	26

Evacuations of military personnel per 1,000 strength for the period 26 June to 30 July 1948 were as follows:

JAPAN	3.4
KOREA	2.4
MARBO	1.3
PHILRYCOM	.60
THEATER	2.3

* Includes air evacuees from Korea

** Patients evacuated to Japan for onward Evac.

Hospitalization

1. The Bed Status Report as of 30 July 1948 was as follows:

	Total T/O Beds Auth.	Total T/O Beds Establ.	Total T/O Beds Occupd.	% Auth. T/O Beds Occupd.	% of Establ. Beds Occupd.
JAPAN	4,450	4,469	2,119	48	47
KOREA	2,050	1,150	653	32	57
MARBO	825	447	307	37	69
PHILRYCOM	2,350	2,275	1,137	48	50
THEATER	9,675	8,341	4,216	44	51

2. Admission rates per 1,000 troops per annum for the 5-week period ending 30 July 1948 were as follows:

	THEATER	JAPAN	KOREA	MARBO	PHILRYCOM
All causes	591	722	683	275	440
Disease	534	652	622	239	399
Injury	57	70	61	36	41
Psychiatric	18	16	36	16	8.8
Common Respiratory Disease	55	50	116	16	35
Influenza	1.3	2.2	0	1.3	.46
Primary Atypical Pneumonia	3.6	4.0	3.5	4.7	2.1
Common Diarrhea	15	4.2	45	.86	19
Bacillary Dysentery	1.5	0	3.8	0	3.5
Amebic Dysentery	3.1	.12	2.9	.86	10
Malaria	9.1	1.5	27	.43	14
Infectious Hepatitis	3.3	3.4	2.3	4.3	3.2
Mycotic Dermatoses	9.1	11	18	.43	3.5
Rheumatic Fever	.66	.86	.57	.43	.46
Venereal Disease	97	129	99	43	65

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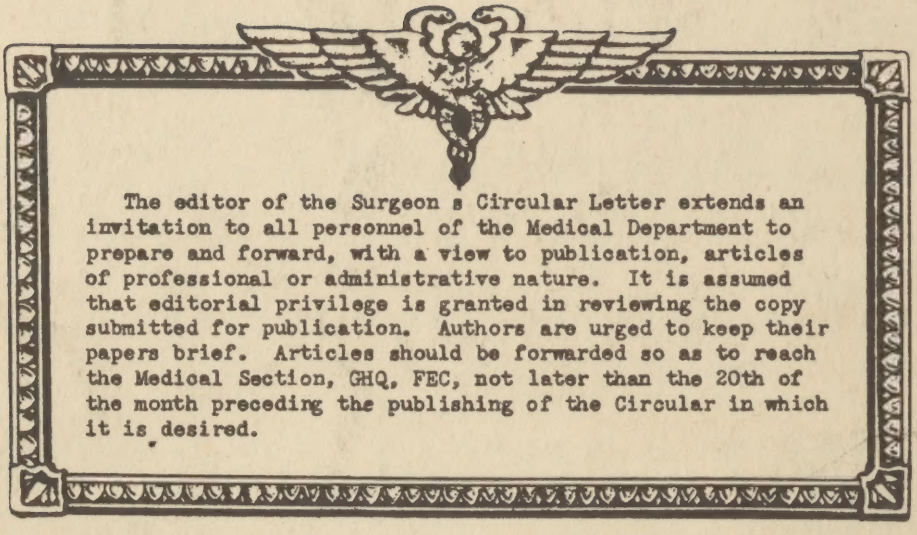
2637—FEC Printing Plant—10/48—2.3M



The editor of the Surgeon s Circular Letter extends an invitation to all personnel of the Medical Department to prepare and forward, with a view to publication, articles of professional or administrative nature. It is assumed that editorial privilege is granted in reviewing the copy submitted for publication. Authors are urged to keep their papers brief. Articles should be forwarded so as to reach the Medical Section, GHQ, FEC, not later than the 20th of the month preceding the publishing of the Circular in which it is desired.